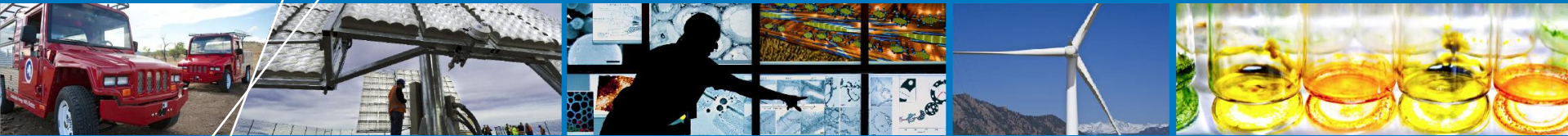


# DOE Agency Fleet Meeting



**FedFleet 2012**

**Navid Ahdieh & Ryan Daley**

**June 25, 2012**

# NREL – DOE Fleet Sustainability Assistance

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- **Federal fleet requirement guidance**
  - e.g. May 24, 2011 Presidential Memorandum on Federal Fleet Performance – annual VAM submission
- **Resources for meeting requirements**
  - FleetDASH
  - NOVA analysis
- **Assistance with fulfilling reporting mandates**
  - Annual AFV Acquisition Report

# Statutory & E.O. Requirements

	<i>EPA Act</i> ( '92 & '05)	<i>E.O. 13423</i>	<i>EISA '07</i>	<i>E.O. 13514</i>
<b>AFV Acquisition</b>	AFVs 75% of light-duty acquisitions	Use PHEVs when commercially available		
<b>Alternative Fuel Use</b>	AFVs only use AF unless waived	Increase AF use 10% from previous year	Install renewable pumps at all fueling stations	
<b>Fleet Planning</b>			Agency plan to meet E.O. 13423 requirements	Agency plan to meet E.O. 13514 sustainability goals
<b>Petroleum Reduction</b>		2% annual reduction in petroleum use FY05 - FY15	E.O. 13423 requirement becomes law	2% annual reduction in petroleum use FY05 - FY20
<b>GHG Emissions Reduction</b>				Sets % reduction targets for Agency GHG emissions

# DOE VEHICLE ALLOCATION METHODOLOGY

- **GOAL: Achieve Secretary's 35% inventory reduction plan by FY 2015**
- **HOW:**
  1. Increase use of LSVs (NEVs & LSEVs)
    - ✓ Key replacement for on-site delivery/service vehicles
    - ✓ Inventory and petroleum reductions
  2. GSA's short-term vehicle rental plan
    - ✓ Rule change on December 8, 2011 in the 41 CFR 102-34 Motor Vehicle Management regulations
    - ✓ Increases 60 continuous day rental timeframe to **120** continuous days
    - ✓ Ideal replacement for large number of seasonal DOE vehicles
    - ✓ Inventory and petroleum reductions



# DOE VEHICLE ALLOCATION METHODOLOGY

- **GOAL: VEHICLE SIZE REDUCTION**

- VAM = RIGHT-SIZING

- ✓ Inventory Size
    - ✓ Vehicle Size

- WHY?

- Achieve inventory , AFV acquisition and petroleum reduction targets

- HOW? (AS FIELD SITE MISSIONS ALLOW)

- Emphasize smaller vehicle sizes with higher fuel economy
      - e.g. SUVs for passengers to smaller/fuel efficient options OR fewer vans
    - Reduce the number of 4X4 vehicles
      - Where terrain and vehicle mission; does not demand it
      - Replace with either 4X2 vehicles or smaller size and more fuel efficient vehicles.
    - Reduce the number of heavy duty vehicles
      - Those agency-owned with seasonal requirements are candidates for short-term rental via GSA
      - Reduce storage/maintenance costs



# DOE VEHICLE ALLOCATION METHODOLOGY

- **GOAL: Acquire All AFVs for LDVs by 12/31/2015**
  - 5/24/11 Presidential Memorandum
  - In FY 2011, 4,952 out of a total 7,680 LDVs were AFVs (65%).
- **HOW?**
  - NOVA Analysis
  - Existing efforts:
    - In 2010, Secretary's HEV acquisition strategy
      - By the end of FY2012, HEVs replace at least 1,200 conventional gasoline vehicles.
    - In 2012, DOE – GSA EV Pilot Program
      - DOE will receive 15 EVs & EVSE from GSA to distribute to 4 sites around the US



# DOE VEHICLE ALLOCATION METHODOLOGY

- **GOAL: Locate AFVs in Proximity to AFV Fueling Stations**
- **HOW?**
  - Coordination with FEMP and GSA –  
where access to alternative fuel unfeasible
    - Acquire HEVs and Low GHG vehicles
    - Install agency-owned alt fuel infrastructure
    - Relocate vehicles
    - Incremental acquisition increases as GSA increases AFV offerings (100% by 12/31/15!)
  - Tools
    - NOVA analysis
    - AFDC - Alternative Fuel Station Locator



# DOE VEHICLE ALLOCATION METHODOLOGY

- **GOAL: Vehicle sourcing decisions – GSA Lease > Agency Owned / Commercial Lease**
- **WHY?**
  - 41 CFR 101-25.501 – Justify leasing vs ownership; GSA Leasing = Default
    - Vehicle lifecycle costs are explicit
    - Increased efficiency of fleet planning process
    - If GSA lease is unavailable or overly costly, fleet manager provides comparison justification/rationale - OMB Circular A-94
    - Submit statement of functional needs waiver from standard acquisition practice to GSA in order to justify purchase/commercial lease.
    - Pursuant to 41 CFR 101-39.104-1, each site consolidates owned assets into leasing agreements through GSA as much as possible
- **FY 2011 - 3,774 DOE owned vehicles (26% of the fleet); 246 commercially leased vehicles.**
  - Short-term rentals?
  - LSVs?



# Fleet Acquisitions

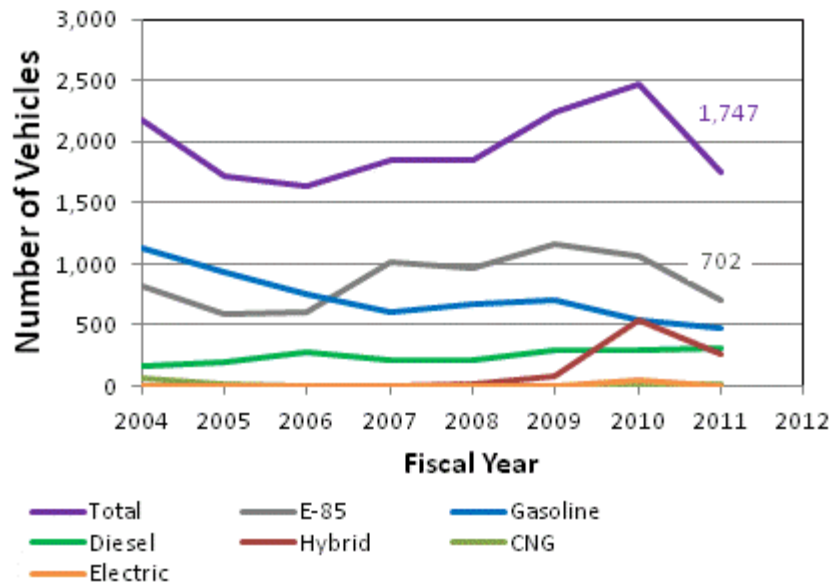
## FY2011 DOE EPA Act 1992 AFV Acquisition Credits

# AFV Credits: **1,145**

# Covered LDV Acquisitions: **669**

COMPLIANCE: **171%** (Compliance = >75%)

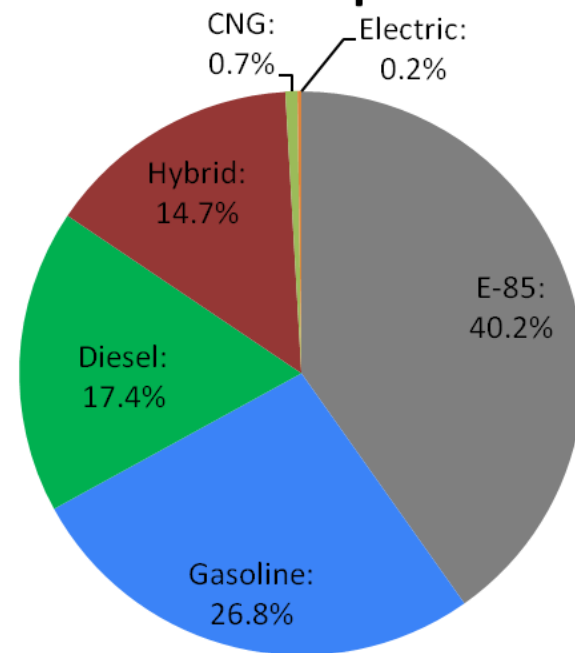
### DOE Acquisitions



Source: [fastweb.inel.gov](http://fastweb.inel.gov)

EO Covered Agency = "Yes"; Locale = "Domestic"; All Acquisitions

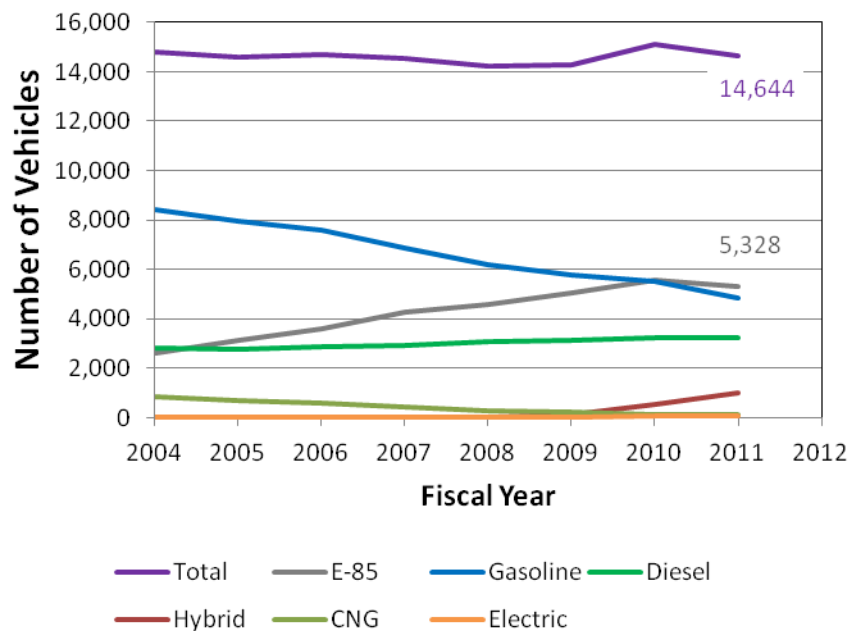
### 2011 DOE Acquisitions



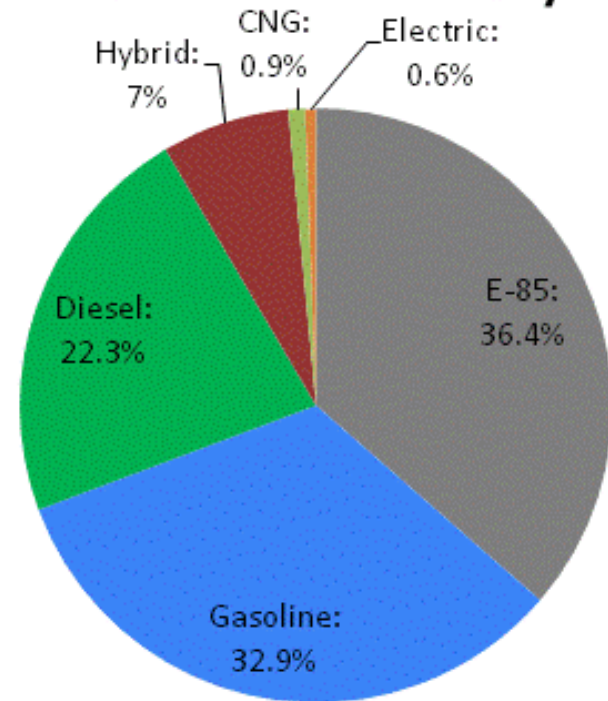
Note: LSEVs represent 98.2% of all electric vehicles in the Federal Fleet; LSEVs do not receive AFV acquisition credits

# Fleet Inventory

## DOE Inventories

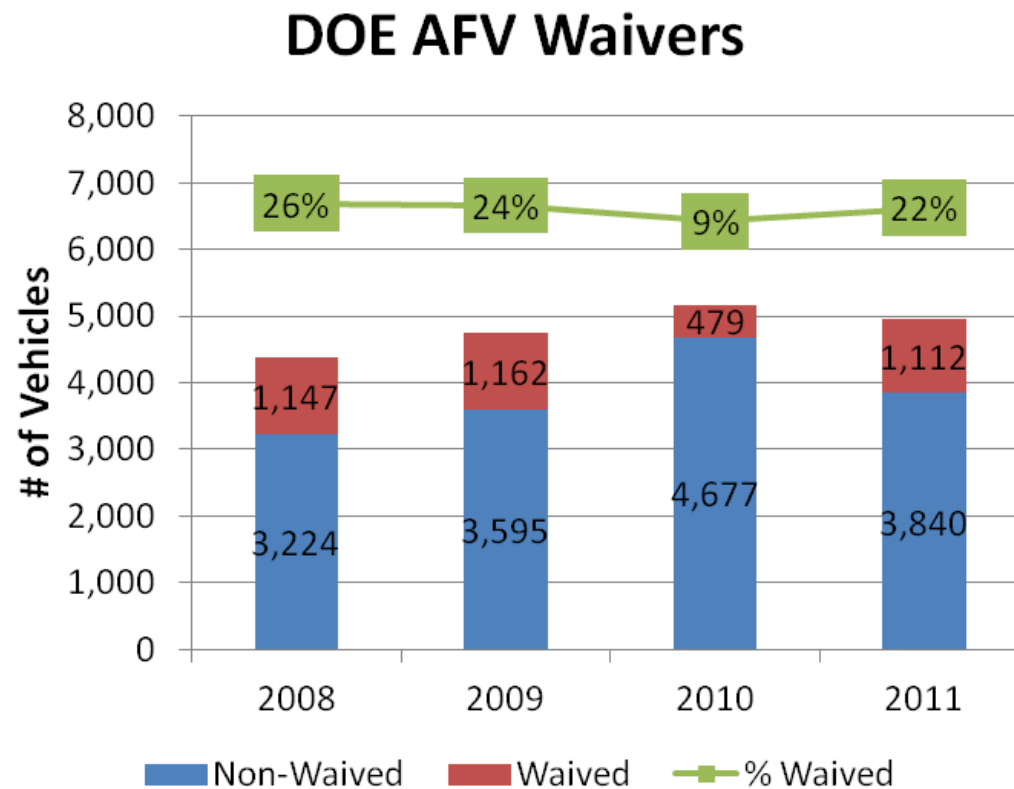


## 2011 DOE Inventory

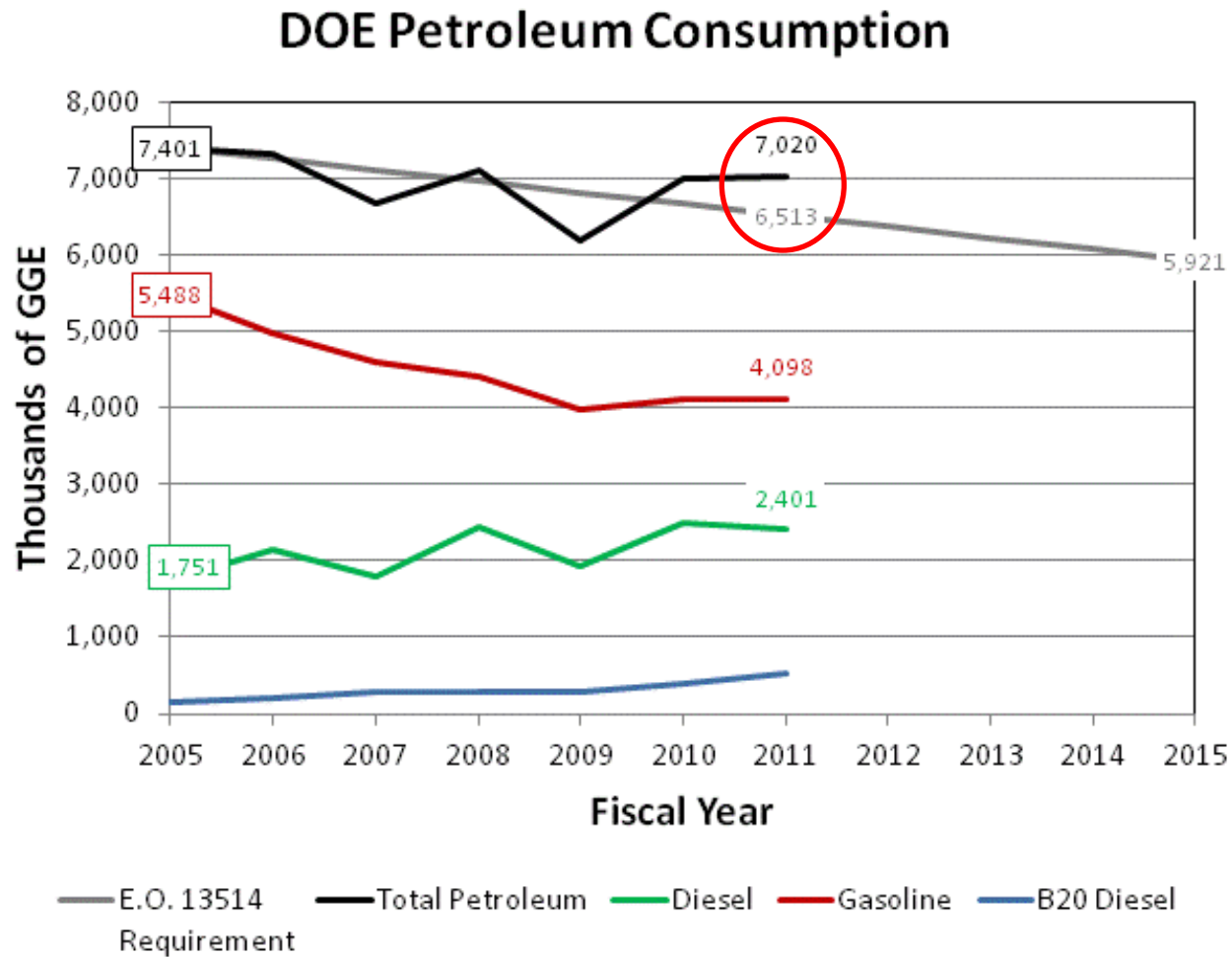


Source: [fastweb.inel.gov](http://fastweb.inel.gov)

EO Covered Agency = "Yes"; Locale = "Domestic"; Complete Inventory



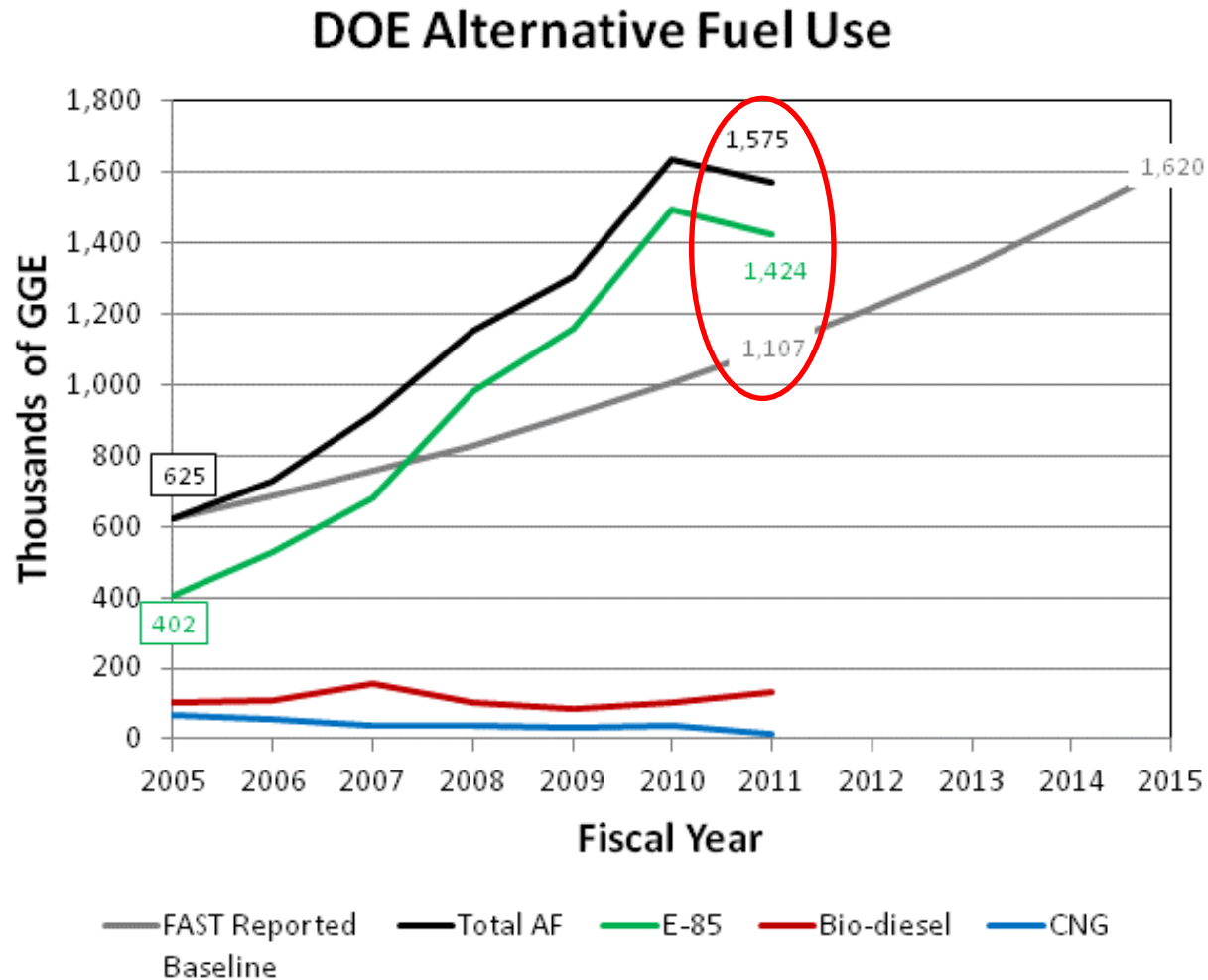
# Fleet Petroleum Use



Source: [fastweb.inel.gov](http://fastweb.inel.gov)

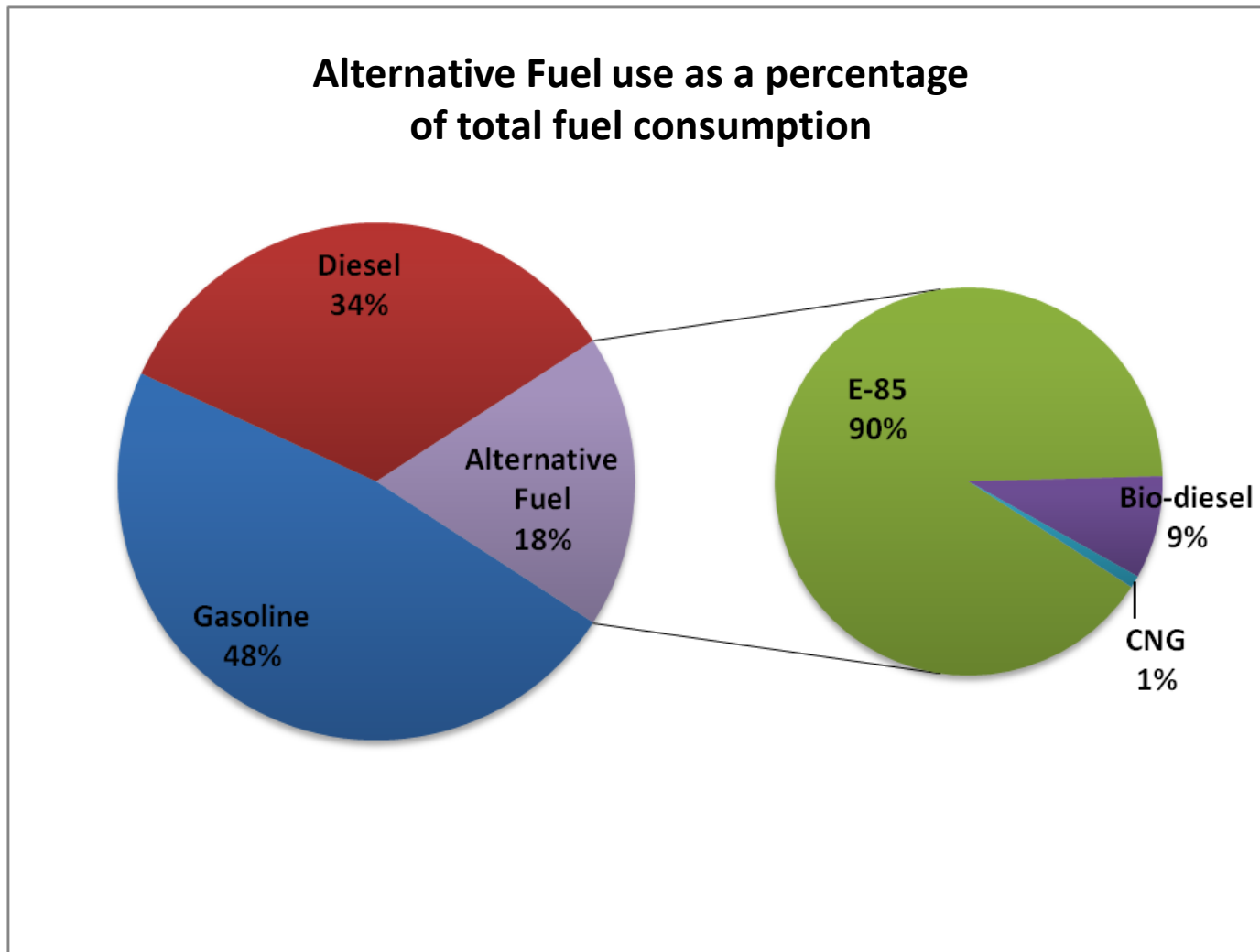
Fuel Group = "Petroleum"; EO-covered Fuel = "Yes"

# Fleet Alternative Fuel Use

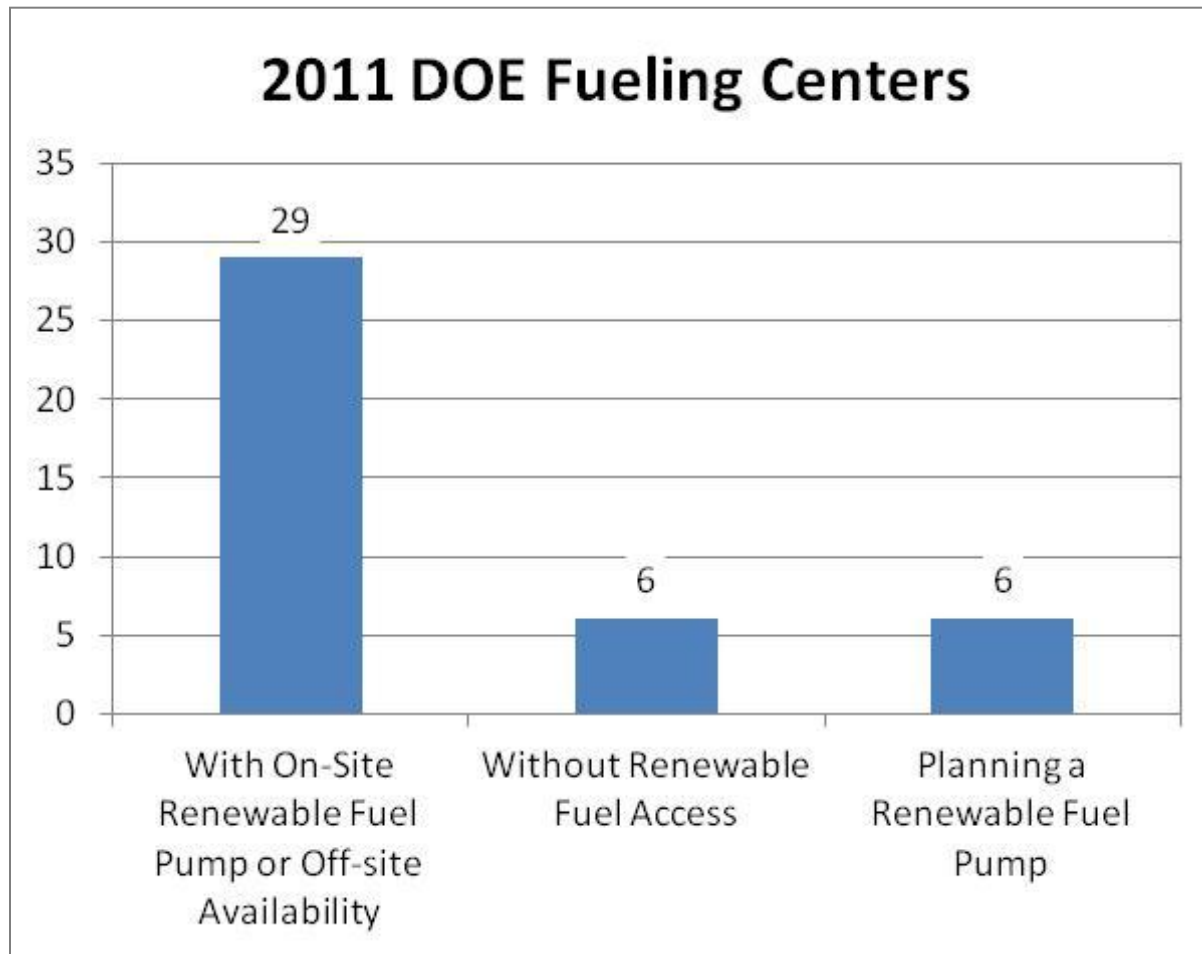


Source: [fastweb.inel.gov](http://fastweb.inel.gov)  
Fuel Group = "Alternative"

# Fleet Alternative Fuel Use



# Fueling Centers

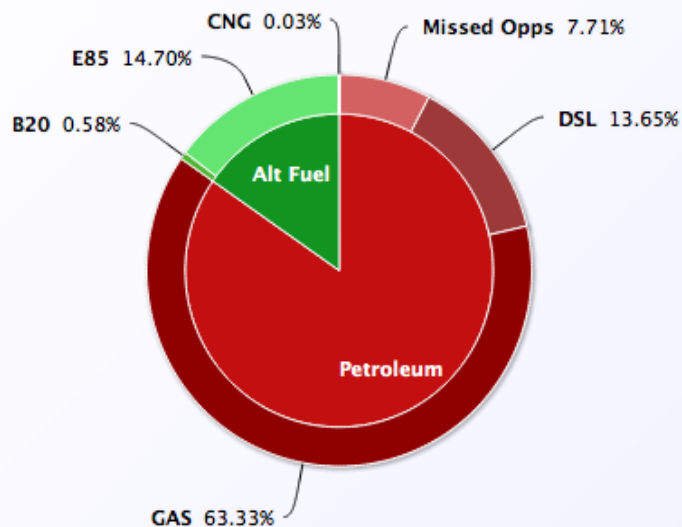


# Fleet Sustainability Dashboard (FleetDASH)

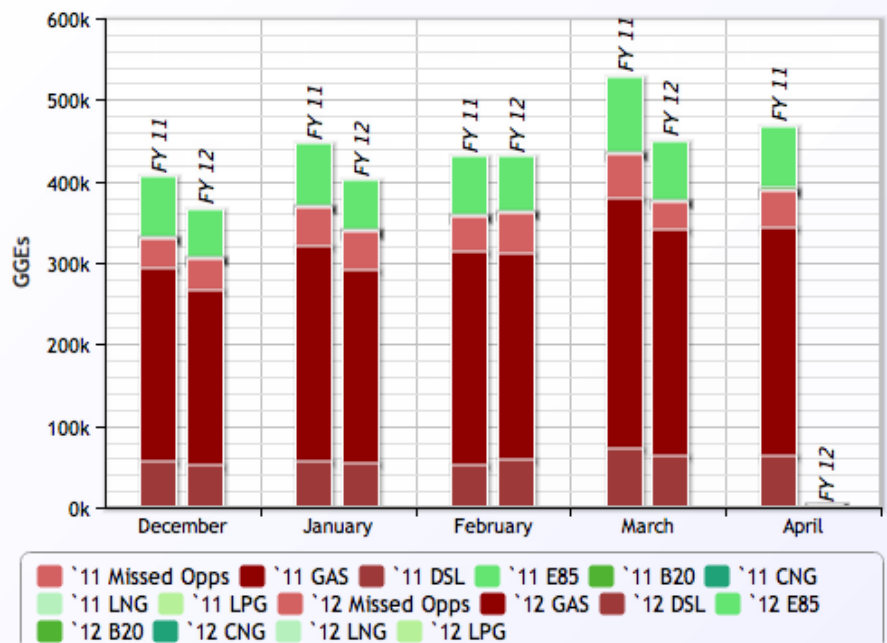
Regularly tracking Federal agencies' fleet fuel consumption, greenhouse gas emissions, and vehicle inventories.

Goal: *Actionable Intelligence*

Fuel Used by Type (FY 2012 to Date)



Monthly Total Fuel Consumption: FY11 and FY12



<https://federalfleets.energy.gov/FleetDASH/>



# You Can't Manage What You Don't Measure

- Do you know your successes and shortcomings?

Who, What, Where, When, How Much, and... WHY?

Fleet ▼	Petroleum		Alt Fuels		FYTD Total Fuel Use (GGE) ▼	Missed Opportunities	
	Total GGE ▼	% of Total Fuel Use ▼	Total GGE ▼	% of Total Fuel Use ▼		Total GGE ▼	% of Total Fuel Use ▼
Fleet 1	945,744	81.7%	212,522	18.4%	1,158,267	116,584	10.1%
Fleet 2	759,037	76.9%	228,175	23.1%	987,211	80,246	8.1%
Fleet 3	396,388	98.5%	6,059	1.5%	402,447	27,341	6.8%
Fleet 4	556,239	97.3%	15,210	2.7%	571,448	20,924	3.7%
Fleet 5	103,999	71.2%	42,143	28.8%	146,142	15,533	10.6%
Fleet 6	18,778	97.2%	550	2.9%	19,328	1,455	7.5%
Fleet 7	5,520	87.2%	811	12.8%	6,331	1,132	17.9%
Fleet 8	3,062	63.7%	1,742	36.3%	4,805	378	7.9%
Fleet 9	885	100%	0	0%	885	63.3	7.2%
<b>Total:</b>	2,789,653	84.6%	507,212	15.4%	3,296,864	263,657	8.0%

More Info: *Fueling Behavior Change: Getting Drivers to Use Alternative Fuel*

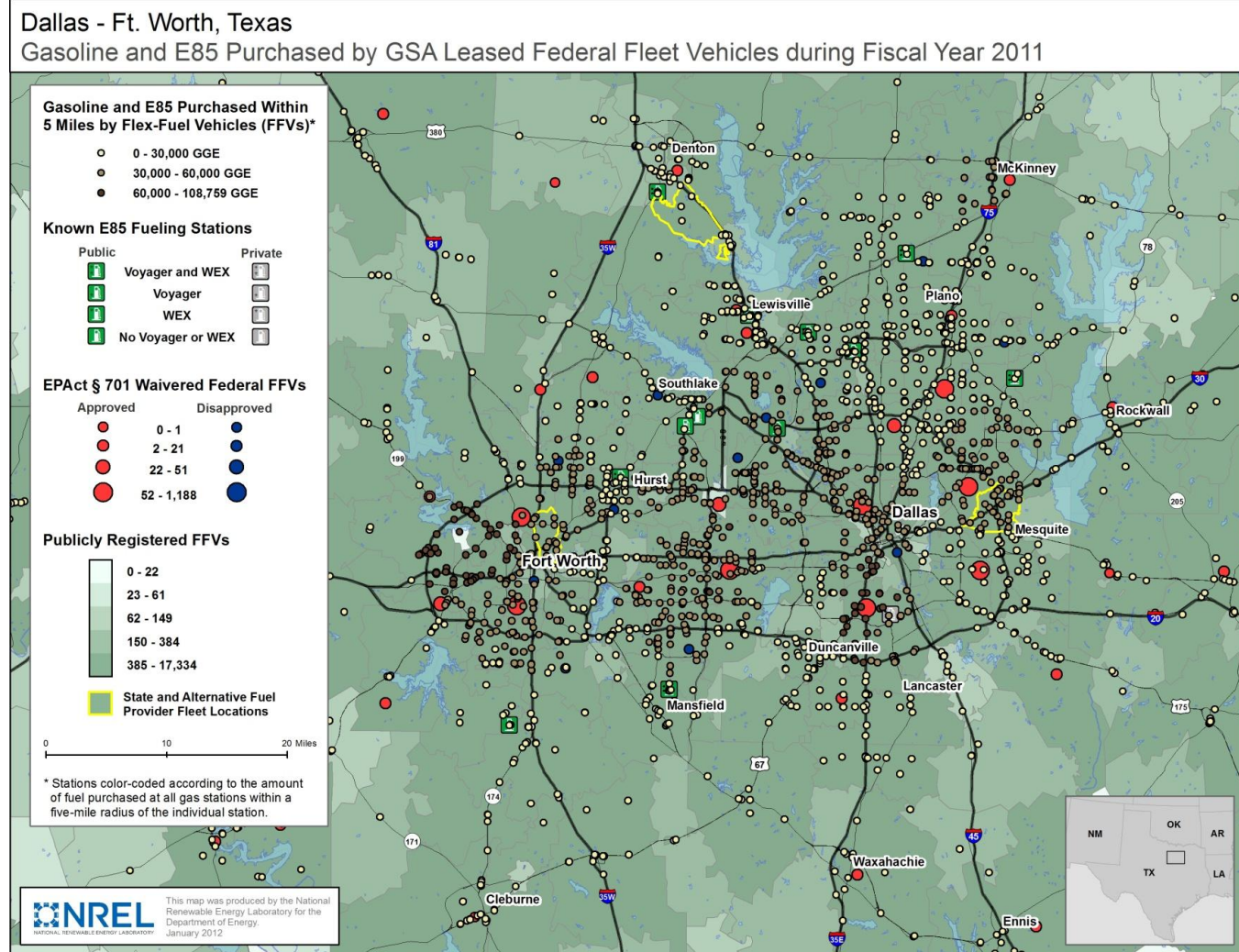
Training Session 10, Thursday 6/28, 11:15 am – 12:15 pm

# Analysis and Tools

## Fuel Use Analyses

Identifying 'hot spots' of Federal fleet activity where:

- (1) existing AF infrastructure is underutilized &
- (2) new infrastructure could be best located to serve Federal fleet vehicles.



# NREL Optimal Vehicle Acquisition (NOVA) Analysis

**GOAL:** Identify an *optimal* fleet acquisition strategy to *maximize* reductions in petroleum use & GHG emissions

## PRIMARY METHODS:

- Acquire the most efficient vehicles
- Align AFVs with available infrastructure

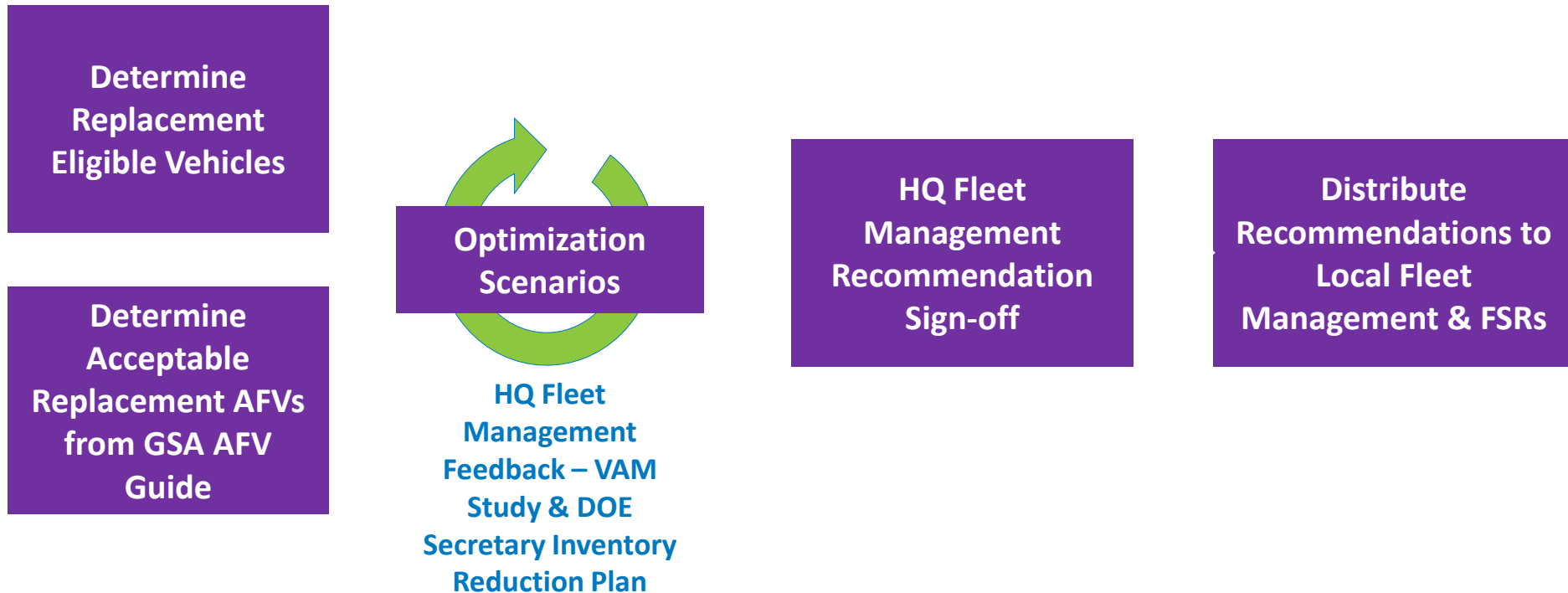
## PRIMARY CONSTRAINTS:

- AFV Budget
- Fleet Mandates
- Mission Requirements

**OUTCOME:** Specific vehicle acquisition recommendations for optimal fleet inventory

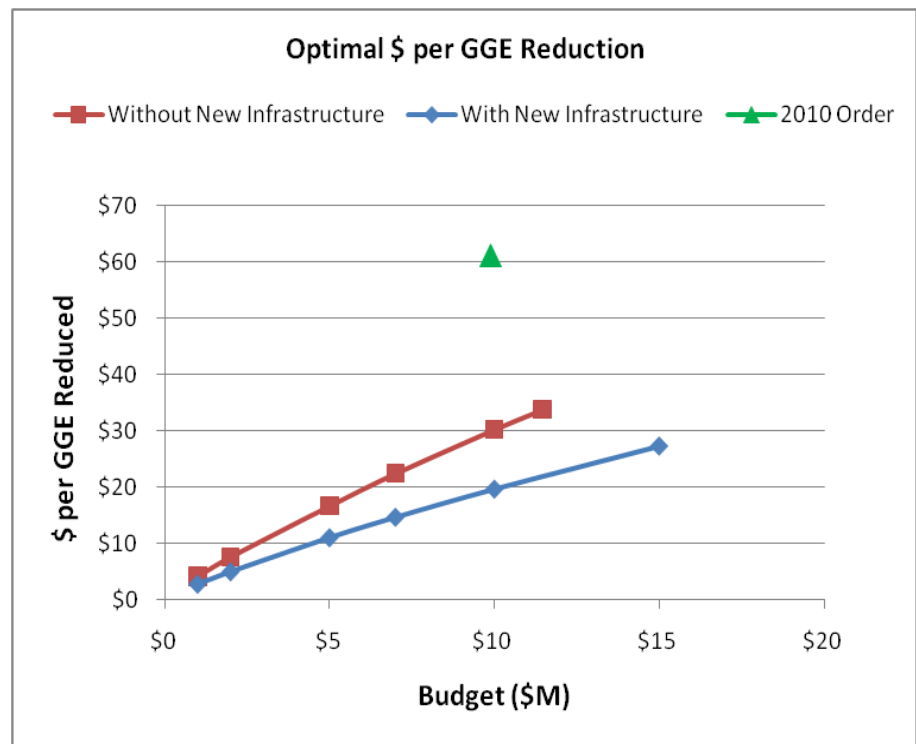
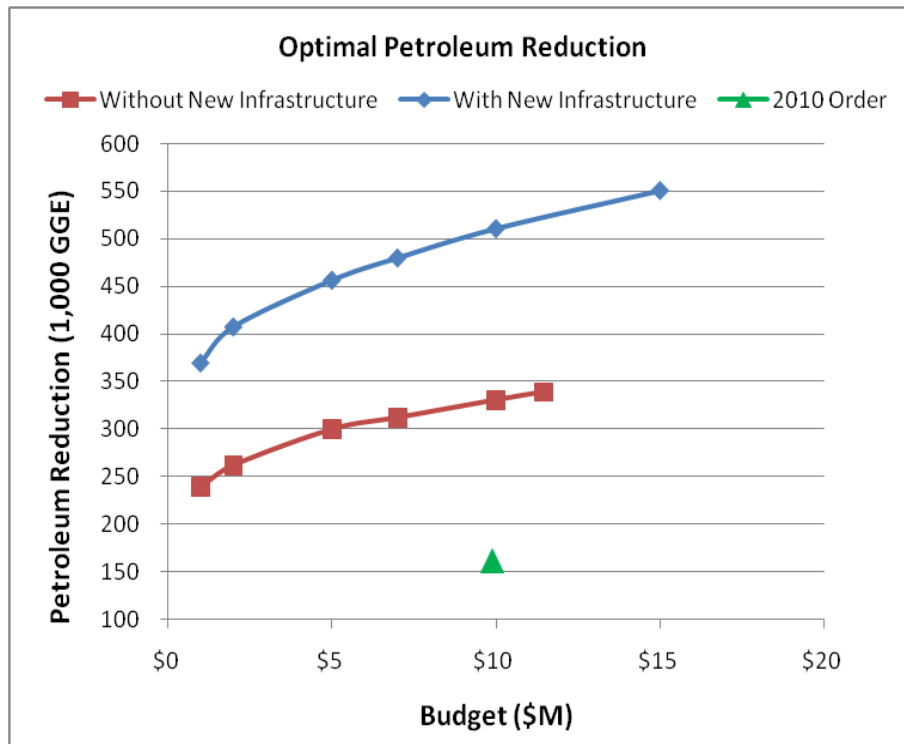
# Technical Assistance: NOVA Analysis

## Optimization Management Process



# Technical Assistance: NOVA Analysis

## Historical NOVA Outcomes: Significant petroleum savings for any budget



# Challenges and Opportunities

- **Challenges:**

- Reducing petroleum consumption with expanding missions
- “Optimize” fleet composition/size and 100% AFV acquisitions
- E85 Infrastructure: 49% of Federal FFVs still lack access to E85
- CNG & Propane: Only 3 light-duty CNG vehicles offered
- Hybrid incremental costs remain high
- EV infrastructure and vehicle availability

- **Opportunities**

- E85 vehicles continue to be the AFV of choice, and E85 availability is increasing
- Diesel use is on the rise, but biodiesel use has remained constant
- CNG & Propane: Medium- and heavy-duty applications
- Hybrids will continue to be acquired in large numbers
- 4 EVs currently on GSA schedule

# Contacts

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